PDB36
REDUCED RATES OF HYPOGLYCEMIA LEAD TO COST SAVINGS FOR TYPE 2 DIABETIC PATIENTS TREATED WITH SAXAGLIPTIN VERSUS SULPHONLYUREA IN ACTUAL CLINICAL PRACTICE

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OBJECTIVES: To estimate the clinical and economic impact of saxagliptin (SAXA) versus sulfonylurea (SU), both with metformin (MET), on the reduction of hypoglycemia among individuals with type 2 diabetes (T2D) in clinical practice. **METHODS:** Our analysis combined data from several sources to estimate outcomes on a per-patient and health plan-population level. Patient survey data (n=91) were used to estimate real-world rates of hypoglycemia for patients treated with SU+MET, while the relative risk reduction observed in the pivotal SAXA clinical trial was applied to estimate the proportion of patients receiving SAXA+MET who experience ≥1 hypoglycemia event. Costs associated with hypoglycemia treatment were obtained from an administrative claims analysis (n=813) and epidemiologic data were obtained from the literature. Costs are reported in 2011 USD. **RESULTS:** Treatment with SAXA+MET was estimated to reduce the probability of experiencing ≥1 event from 68.1% to. 5.6% (net -62.5%). At these rates, resultant annual costs when all diabetes-related medical claims were considered were $435/patient treated with SU+MET and $36/patient treated with SAXA+MET, an annual cost savings of $399/patient receiving SAXA+MET. If 50% of eligible patients in a 100,000-member health plan were switched from SU+MET to SAXA+MET, the net diabetes-related cost savings due to reduced hypoglycemia was estimated at ~$216,000 in 2011, increasing to ~$230,000 by 2013 (net savings of ~$0.19 per-member-per-month). When only confirmed events [i.e., symptom(s) + blood glucose <70mg/dL] were considered, the net reduction in event rate was -24.2%, with annual cost savings predicted at $209/patient or ~$113,000-121,000 on a health plan level (savings of ~$0.10 per-member-per-month). **CONCLUSIONS:** When clinical trial results for SAXA+MET are translated to actual clinical practice, the model predicts the lower rate of hypoglycemia (considering all events as well as confirmed events only) relative to treatment with SU+MET will result in considerable cost savings on both a per-patient and health-plan level.

PDB37
THE COST OF HYPOGLYCEMIC EVENTS ASSOCIATED WITH DIABETES: A RETROSPECTIVE CLAIMS DATABASE STUDY

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OBJECTIVES: Hypoglycemic events are a common complication associated with diabetes and the majority of these events are mild and self treated by the patient. For severe hypoglycemic events, however, hospital visits are often required. This study was conducted to better understand the impact of medical attendance required to care for severe hypoglycemic events on total annual health care costs. **METHODS:** A 1:1 matched case-control cohort analysis was conducted in the US using the IMS LifeLink™ Health Plan Claims Database. Patients were included as cases if they experienced at least one hypoglycemic event in 2009 which required hospitalization and as controls if they did not experience any hypoglycemic event. Cases and controls were matched by age, gender, type of diabetes, baseline co-morbidities and payer type. Univariate and multiple regression analyses on total annual health care costs were conducted. **RESULTS:** A total of 1878 matched cases and controls were included. The mean age was 58.6 (13.7) years old, 51.2% of patients were males and 97.2% of patients had type II diabetes. Patients were mostly covered by commercial health insurance (69%) and Medicare (20.1%). The mean baseline Charlson Co-morbidity Index was 3.5 (2.5), and the main baseline co-morbidities were hypertension (77.0%) and dyslipidemia (48.4%). Univariate results showed that cases with severe hypoglycemic events had significantly higher total annual healthcare costs than their respective controls ($32,337 vs. $19,786, p-value<0.0001). These results were confirmed by the multivariate analyses which showed that severe hypoglycemic events led to a statistically significant 1.66-fold (95%CI = [1.35; 2.04]) increase of total annual health care costs compared to controls, after adjusting for other relevant co-factors such as region and co-morbidities. **CONCLUSIONS:** The medical attendance required to care for severe hypoglycemic events in patients with diabetes was found to have a significant impact on total annual health care costs.

PDB38
OBESITY AND WEIGHT CHANGE EFFECTS ON HEALTH CARE COSTS OF DIABETES: A SYSTEMATIC REVIEW STUDY

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OBJECTIVES: Diabetes is a serious, costly metabolic disorder. The economic burden of obesity has been described in many studies. This review aims to provide an update on excess health care costs of diabetes attributed to overweight and obesity. **METHODS:** This review is based on a PubMed search of the English language literatures published until November 30, 2011. Search conducted by keywords of "Cost", "Obesity" and "Diabetes" with Title/Abstract limitation. This search was completed by reviewing the reference section of each article obtained to check other surveys not included in the database. **RESULTS:** A total of 479 articles were cited, 27of which met the inclusion criteria. Of these 27 studies, 11 concluded that obesity can cause incremental medical costs of diabetes. Seven studies assessed the effect of weight change on diabetes costs, among which; five studies showed that decreasing in medical costs of diabetes can be a consequence of weight reduction and the other two studies provided estimation of incremental costs of diabetes that is attributed to weight gain. Eight studies examined costs of diabetes to be attributed to obesity or overweight. According to the result of the only study left, obesity decreases costs of diabetes. **CONCLUSIONS:** Obesity is a worldwide growing problem. Many literatures indicated that obesity accounts as an important risk factor for many chronic diseases such as diabetes. The economic burden of obesity on health care system is well-known and its concomitancy with diabetes is associated with incremental health care costs. This study suggests an urgent need to develop new and effective interventions to control obesity and decrease its prevalence.

PDB39
THE COST OF COMPLICATIONS ASSOCIATED WITH DIABETES: A RETROSPECTIVE CLAIMS DATABASE STUDY

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OBJECTIVES: Diabetic patients often have other complications whose impacts on health care costs are not always fully realized. The objective of this study was to quantify these additional costs. **METHODS:** A 1:1 matched case-control 2-year follow-up analysis was conducted using the IMS LifeLink™ Health Plan Claims Database. Six cohorts were analysed: renal disorders (RD), heart disorders (HD), lower limb disorders (LD), eye disorders (ED), hypoglycemia (HY) and neuropathy (NE). Inclusion criteria included adult patients, a diabetes diagnosis in 2008, continuous enrolment, no complication of interest (COI) during the pre-index period (all patients) and the post-index period (control patients). Patients were matched by age, gender, type of diabetes, comorbidities, pre-index complications, payer and index date. Results reported were demographics, other complications and healthcare costs. A Gamma multiple regression model with a log-link determined the impact of the COI on total annual healthcare costs, adjusted for other relevant co-factors. **RESULTS:** The demographics across all cohorts were consistent with a mean age of 52-55 years old, 53% of males, more than 99% of patients with type II diabetes and more than 93% patients with commercial insurance. Total first year health care costs in the HD, NE, RD, LD, and HY cohorts were statistically higher in cases with a total cost increase varying from 20% (HY) to 152% (HD). Second year total health care costs were statistically higher for cases in the HD and NE cohorts only with an increase of 36% and 20% respectively compared to controls. The ED cohort did not show any significant difference in health care costs between cases and controls. **CONCLUSIONS:** Most diabetes COI were associated with significantly higher total health care costs in the first year following the COI, with the exception of ED. This association only remained significant during the second year for HD and NE.

PDB40
ECONOMIC BURDEN OF TYPE 2 DIABETES MELLITUS IN CHINA

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OBJECTIVES: To estimate direct and indirect costs associated with type 2 diabetes (T2DM) in Tianjin, China. **METHODS:** Data were obtained from a cross-sectional survey of patients with T2DM from October to December, 2011 in Tianjin, China. Patients were eligible for the survey if they were ≥18 years, had T2DM diagnosis for ≥1 year, and received antidiabetic treatment ≥1 year. T2DM-related outpatient utilization and costs and direct non-medical costs were reported for the past 2 weeks and were extrapolated to 1 year. Inpatient utilization and costs for T2DM were reported for the past year. Indirect costs resulting from DM-related productivity loss due to absenteeism were estimated among employed patients using the average daily wage of urban employees in Tianjin. All costs were reported in 2011 US dollar using the exchange rate of 6.47 Chinese Yuan to 1 USD. **RESULTS:** A total of 279 patients (253 outpatients and 26 inpatients) were included with 50.9% female, mean age of 60.7 years and mean disease duration of 10.4 years. The mean annual direct medical costs were $4521: 76.3% were covered by payers and 23.7% by patients. Outpatient and inpatient costs were $2886 and $1411, accounting for 63.8% and 31.2% of direct medical costs, respectively. The rest were attributed to medications purchased from retail pharmacies and self-glucose monitoring costs. Mean annual direct non-medical costs were $209, including $146 nutrition costs, $63 transportation and accommodation costs. Mean annual costs associated with productivity loss were $723 among employed patients (n=48). **CONCLUSIONS:** T2DM poses substantial economic burden to payers, patients and society. The majority of total costs are attributed to direct medical costs but indirect costs from productivity loss are substantial among employed patients.

PDB41
IMPACT OF SUSTAINED HEMOGLOBIN A1C CONTROL ON HEALTH CARE COSTS AMONG PATIENTS WITH DIABETES IN HAWAII

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OBJECTIVES: To examine the relationship between sustained glycemic control and health care costs among patients with diabetes with an initial hemoglobin A1c (HbA1c)>9%. **METHODS:** We conducted a retrospective analysis of administrative data from patients with diabetes and initial poor HbA1c control enrolled in a large health plan in Hawai'i (n=1304). We used propensity scores to identify a comparable cohort based on age, gender, type of coverage, diabetes duration, number of medications, location of residence, comorbidity conditions, and morbidity level. We examined the relationship between reduced HbA1c values and costs in the same year as well as the impact of achieving sustained HbA1c control (at < 7%) for three years on changes in health care costs using generalized linear models. **RESULTS:** In cross-sectional comparisons, the average annual direct medical costs for patients with a HbA1c less than 7% was $14,821 compared to $12,108 for the